

## The Unwatched Intersection

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This is a proposal to investigate cost structures and organization of the Photo Voltaic Industry.

An important driver of photo voltaic industry is the integrated circuit industry. The poorly understood intersection of integrated circuits and photo voltaics is rarely considered in industry analysis. How do cost curves and technological advances of these two industries relate? Filling gaps in knowledge and understanding at the intersection of the intersection of ic / pv will enable better decisions. A better understanding of the relations between the production functions of these two industries may offer opportunity to improve the industry through better organization of industry.

Much is unknown about the drivers of cost structures within the Photo Voltaic industry. A better understanding of the underlying drivers of costs and technological advancement will enable better decisions for industrial organization. That advancement of knowledge can occur with better understanding of experience curves, technology capture, and efficiency of subsidies.

Currently experience curves are used to claim photo voltaic industry is a success. This claim of success was used to justify allocation of resources from both private voluntary and public involuntary sources. Those resources could better have been served as substitutes to other technology industries, integrated circuit manufacturing industries, and other endeavors. The knowledge to be gained in this proposal will advance understanding of the photo voltaic industry's experience curve, enabling better organization of industry's scarce resources.

The efficiency of government subsidies is an only partly understood area of new infant industries such as photo voltaics. A better understanding of the effect of these subsidies on research and manufacturing promotion activity could enable better use of these funds. The hypothesis tested in this study will provide better answers to questions such as these.

The impact of this study is to shine light on industry and the mechanisms which drive it. The better understanding of the driving forces and mechanisms behind this industry should support better decisions by policy makers, managers, and scientists. More understanding allows better choices in which research directions to take, which industries to subsidize and enable, and which practices to implement or inhibit. The impact is a better run industry, which give taxpayers few subsidy costs, consumers cheaper energy, and businesses more accurate decisions.

Topics considered to advance industry knowledge and improve results for society include: identifying cost drivers in the photo voltaic industry, economies of scale, the role of the integrated circuit industry, how manufacturing sites and processes drive these cost drivers. The proposal seeks to dispel common knowledge myths about photo voltaic industries, the effects of new technologies, and externalities currently ignored by the industry status quo. The common knowledge relation of

Swanson's Law is considered, the measures used to evaluate learning curves of PR, and the logic of subsidies. The end result should be new tools, analytics, and allocation decisions for funding. A research direction of hypothesis testing will be employed to investigate the issues stated above. It is through that hypothesis testing research that benefits can be achieved..

An important driver of the infant photo voltaic industry is the integrated circuit industry. The poorly understood interactions between integrated circuits and photo voltaics is rarely considered in industry research and analysis. How do costs and efficiencies in these two industries relate? Better understanding of these relations may offer opportunity to improve the industry. More study is needed into underlying drivers and characteristics of solar industry cost curves. The project should offer benefits.